

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TruePosition, Inc.,)	
)	
Plaintiff/)	
Counterclaim-Defendant,)	
)	Civil Action No. 05-747-SLR
v.)	
)	
Andrew Corporation,)	
)	
Defendant/)	
Counterclaim-Plaintiff.)	
_____)	

APPENDIX A
TO
TRUEPOSITION, INC.'S OPENING CLAIM CONSTRUCTION BRIEF
PART 2
A142 – A271

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APPENDIX A

TO

**TRUEPOSITION'S OPENING
CLAIM CONSTRUCTION BRIEF**

PART 2

A142 – A271

OCT- 5-93 TUE 12:06 W.W.K.M.N.

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PATENT

telephone transmission, this method is only applied once. The results of the delay pairs for each signal are then directed to the location calculation algorithm.

This description clearly supports the functions and steps recited by claims 6 and 40. Moreover, regarding the question of how the reconstructed versions of the original signals are determined, it is noted that the specification specifies:

For each "strong" signal ... received on a particular control channel at a particular first cell site (where "strong" is at least several dB above the noise level), that strong signal is first applied to a signal decoder, such as that used by the cellular system itself. This decoder demodulates the cellular signal to produce the original digital bit stream which had been modulated to produce the cellular signal.

One skilled in the art would understand this to mean that a decoder of the type already used in cellular systems may be employed to obtain the original bit stream which was modulated by the mobile telephone unit. This bit stream is then re-modulated to produce a replica of the signal as it was transmitted by the mobile unit, i.e., without exhibiting the effects of multipath and other types of distortion, such as temporal spreading. This "ideal" signal is then cross-correlated with the received signal, wherein the received signal does exhibit the effects of distortion. The cross-correlation produces a peak which yields a sufficiently unambiguous time of

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PATENT

arrival. One skilled in the art would be able to carry out the claimed process after reading applicants' disclosure. Accordingly, the Examiner is urged to reconsider and withdraw the section 112 rejection.

The Rejection Under 35 U.S.C. § 103

Claims 1-3, 5, and 12-39 stand rejected as being directed to subject matter which is unpatentable over Sagey in view of Song. The following sections outline the claimed invention, the prior art, and the differences between the claimed invention and the prior art, and explain why the claimed invention would have been unobvious in view of the prior art.

I. The Claimed Invention

Applicants first set of claims includes claims 1-21.

Claim 1, the independent claim, is directed to "A cellular telephone location system for determining the locations of multiple mobile cellular telephones each initiating periodic signal transmissions over one of a prescribed set of reverse control channels." The claimed system is defined as comprising means for processing frames of data from cell sites to generate a table identifying individual cellular telephone (control channel) signals and the differences in times of arrival of the cellular telephone signals among the cell sites, and means for determining, on the basis of the times of arrival differences,

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OCT- 5-93 TUE 12:07 W.W.K.M.N.

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PATENT

the locations of the cellular telephones responsible for the control channel signals.

The dependent claims specify details of the location system and call out additional functions performed by preferred embodiments. For example, claim 3 specifies that the central site system comprises a correlator for cross-correlating the data bits of a frame from one cell site system with corresponding data bits from each other cell site system. Claim 4 specifies other details of the central site system. Claim 5 specifies details of the baseband converters.

Claim 12 adds a database "for storing location data identifying the cellular telephones and their respective locations, and means for providing access to said database to subscribers at remote locations."

Claims 14-21 call out means for carrying out additional functions. For example, claim 14 adds "means for merging said location data with billing data for said cellular telephones and generating modified billing data." The billing data is described as "indicat[ing] the cost for each telephone call made by said cellular telephones within a certain time period, said cost being based upon one or more predetermined billing rates." The modified billing data is described as being "based upon a different rate for calls made from one or more prescribed

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locations." Claim 15 specifies that the system applies a lower billing rate for telephone calls made from a user's home.

Applicants' second set of claims includes claims 22-30 and is similar to the first set but is different in that independent claim 22 recites all "means-plus-function" claim elements. The third set of claims includes method claims 31-45.

II. The Prior Art

A. Sagey

Sagey discloses a spread spectrum processing system employing spread spectrum radio transmissions overlaid over existing cellular voice signals. Purportedly, both vehicle location and messaging functions are obtained without sacrificing any of the existing voice channel capacity. The disclosed system requires a special type of vehicle transmitter. See column 2, lines 19-22: "New mobile telephone equipment for deployment in vehicles would include a spread spectrum transmitter in accordance with the present invention." In addition, in the Background of the Invention section (column 1), Sagey mentions that "[t]he cellular telephone band was designed to carry a large number of two-way voice conversations to mobile users. In addition to two way voice communication, there is interest in using the cellular telephone band to provide vehicle location and messaging services, emergency SOS information, and vehicle anti-theft protection services, for example."

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B. Song

Song discloses a vehicle locating system in which a hidden device located in a vehicle is activated by DTMF signals transmitted from a telephone station. Upon activation, the device determines the power at which normally transmitted forward control channel signals are received from several base stations of the network. The device then calculates the distance between the vehicle and each of the base stations and determines the location of the vehicle, using triangulation or arculation. In determining the device's location, the system assumes that the power of the forward control channel signals from each base station decreases in a predictable fashion, according to the formula

$$P_r = kP_t/d^n,$$

wherein P_r equals the power of the signal received from the base station, k is a constant, P_t equals the transmitting power of the signal transmitted from the base station, d equals the distance between the base station and the point where the signal is received, and n is an attenuation factor.

The device in the vehicle determines the power at which each of these signals is received and calculates the average received power. The device also determines the location of each base station from which each signal is transmitted, the transmitting power at which each signal is transmitted, and the

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signal-attenuation factor of each signal. Song discloses that the device reads the base-station's identification and transmitting power directly from the signal, and that the signal-attenuation factor for each signal may be transmitted with, and read directly from, the signal. Song further discloses that, in the alternative, the signal-attenuation factor for each base station, and the location of the base station identified from the signal, may be stored in a read only memory (ROM) included in the device.

A microprocessor calculates the approximate position of the vehicle with respect to the base stations using arculation or trilateralization, as shown in Figure 6. The position of each base station is retrieved from ROM, and the distance from each base station to the vehicle is retrieved from RAM. These distances are represented by arcs in the figure. The approximate location of the vehicle is identified by the area "x" enclosed by the intersection of the arcs.

It should be noted that Song stresses that his system is specifically designed for use in making strength/distance determinations on the basis of forward signals from the base stations, as opposed to reverse signals from the mobile phone, and further that it is actually not specifically adapted for use in making such strength/distance determinations on the basis of control channel signals, as opposed to voice channel signals.

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See column 11, lines 35-40: "The monitored signals from which the strength/distance determinations are made can be signals other than the control channels, such as the voice channels or any other channels or signals normally transmitted from the base stations for cellular-telephone communications." (Emphasis added.) In fact, the forward control channel is employed in Song's system because it essentially carries continuous signals of a higher power than the voice channels. See column 6, lines 52-55: "In most cellular networks, the power of transmission of the control channels for each base station is higher than the power of transmission of the voice channels."

III. Differences Between the Claimed Invention and the Prior Art

With regard to claim 1, which is directed to a cellular telephone location system for determining the locations of mobile cellular telephones "each initiating periodic signal transmissions over one of a prescribed set of reverse control channels," the claimed invention is clearly limited to a system employing reverse control channel signals, i.e., control channel signals from the mobile telephones. This limitation is expressed not only in the claim's preamble but also in the body of the claim. Moreover, claim 1 further recites "means for processing frames of data ... to generate a table identifying ... the differences in times of arrival of the cellular telephone signals among the cell sites."

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Thus, claim 1 is directed to a system which determines the location of a cellular telephone by processing control channel signals from the telephone, i.e., reverse control channel signals, as opposed to forward control channel signals from the base stations. Furthermore, one skilled in the art would appreciate that the characteristics of reverse control channels signals are much different from those of forward control channel signals. In particular, forward control channel signals are transmitted on a nearly continuous basis and may in fact be higher in power than voice signals. On the contrary, reverse control channel signals are transmitted on a periodic basis and are of an extremely short duration. Consequently, the processes involved in determining the location of a mobile telephone at a cell site on the basis of reverse control channel transmissions from the mobile unit are markedly different from the processes involved in determining the location of the mobile unit, at the unit itself, on the basis of forward control channel transmissions from the base stations. The unique problems and advantages inherent in making location determinations on the basis of reverse control channel transmissions are undisclosed by the prior art of record. However, such problems and advantages were recognized by the present inventors and disclosed in their specification. See, e.g., page 7:

There are numerous advantages provided by monitoring [reverse] control channels to

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PATENT

track the locations of cellular telephones. First, a voice channel is an expensive and relatively scarce resource. Cellular systems typically require approximately six to eight seconds to allocate a voice channel to a specific telephone. If voice channels were employed for location tracking, the cellular telephone would have to be called and commanded to initiate a voice channel call every time a location sample were to be taken. This would be both expensive and time consuming. Thus, it would be extremely inefficient for a location system to require the telephone to initiate periodic voice channel transmissions... In contrast, control channel transmissions already occur periodically in cellular systems. Thus, the present invention is compatible with existing cellular telephone protocols and would not require the cellular system or the individual cellular telephones to be modified... Fourth, another advantage afforded by monitoring control channel transmissions is in connection with energy efficiency. Control channel [i.e., reverse control channel] transmissions are very short and require little power in comparison to voice channel transmissions. Accordingly, requiring periodic voice channel transmissions would cause a significant battery drain in the individual cellular telephones. This is avoided by monitoring [reverse] control channels.

Sagey's disclosure of a system employing spread spectrum radio transmissions overlaid over existing cellular voice signals purportedly provides vehicle location and messaging functions without sacrificing any existing voice channel capacity. However, unlike applicants' invention, Sagey's system requires a special type of vehicle transmitter. See column 2, lines 19-22: "New mobile telephone equipment for deployment in

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PATENT

vehicles would include a spread spectrum transmitter in accordance with the present invention."

Thus, in sum, applicants respectfully submit that Song's disclosure of a system making strength/distance determinations on the basis of forward control channel signals from the base stations would not have led one skilled in the art to modify Sagey's system to arrive at the present invention, which employs reverse control channel signals from the mobile unit in making location estimations by identifying individual cellular telephone control channel signals and the differences in times of arrival of the cellular telephone signals among the cell sites.

Moreover, the above remarks distinguishing claim 1 over the prior art on the basis of the use of reverse control channel signals apply to independent claims 22 and 31. Accordingly, each of the present independent claims are patentably distinguished over the prior art.

The dependent claims are further distinguished over the prior art by the additional limitations they recite. For example, claim 3 specifies that the central site system comprises a correlator for cross-correlating the data bits of a frame from one cell site system with corresponding data bits from each other cell site system. Neither Sagey nor Song discloses cross-correlating data bits of one frame from one cell site with data

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PATENT

bits from other cell sites. In addition, the prior art lacks disclosure of the details of the baseband convertors specified by claim 5.

Moreover, the specific functions recited by claims 14-21 are in fact neither disclosed nor suggested by the prior art. Claim 14, for example, adds "means for merging said location data with billing data for said cellular telephones and generating modified billing data" Such a function is clearly lacking in the prior art disclosures. Likewise, claim 15's limitation of the system applying a lower billing rate for telephone calls made from a user's home is neither disclosed nor suggested by the prior art.

Claim 16 adds "means for transmitting a signal to a selected cellular telephone to cause said selected telephone to transmit a signal over a control channel," and claim 17 adds "means for automatically sending location information to a prescribed receiving station in response to receiving a distress signal from a cellular telephone, whereby emergency assistance may be provided to a user in distress." Neither of these functions is even hinted at by the prior art. Sagey's mentioning of the fact that there is interest in using the cellular telephone band to provide emergency SOS information certainly cannot be said to suggest the concept of using reverse control channel signals to locate a cellular telephone and sending

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PATENT

location information to a prescribed receiving station (such as an emergency dispatch station) upon receiving a distress signal (such as a "911" signal).

Claim 18 adds "means for comparing the current location of a given telephone with a prescribed range of locations and indicating an alarm condition when said current location is not within said prescribed range."

Similarly, claim 19's "means for detecting a lack of signal transmissions by a given telephone and in response thereto automatically paging said given telephone," and claim 20's "means for estimating a time of arrival of a given telephone at a prespecified location" are neither disclosed nor suggested by the prior art.

Accordingly, applicants' dependent claims 2-21 are distinguished over the prior art by their association with claim 1 and further by the additional elements and limitations they recite. Similar remarks apply to the other dependent claims. Therefore, the Examiner is respectfully urged to reconsider and withdraw the rejection under 35 U.S.C. § 103.

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DOCKET NO.: ACOM-001

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CONCLUSION

A Notice of Allowance for claims 1-45 is respectfully
requested.

Respectfully submitted,

Michael D. Stein

Michael D. Stein
Registration No. 34,734

Date: 10-4-93

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- 19 -

A154

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October 5, 1993

F A C S I M I L E M E S S A G E

ATTORNEY DOCKET NO.: ACOM-0001
SERIAL NO.: 08/059,248
FILED: May 7, 1993
TO: Examiner: G. Issing
Group: 2202
TELECOPIER NO.: 1-703-308-3718 or
1-703-308-3721
1-703-305-3603
FROM: Michael D. Stein
PAGES TO FOLLOW: 22

A155

- 5-93 TUE 12:02 W.W.K.M.N.

P.02

DOCKET NO.: ACOM-0001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Louis A. Stilp et al.

Serial No.: 08/059,248

Group No.: 2202

Filed: May 7, 1993

Examiner: G. Issing

For: CELLULAR TELEPHONE LOCATION SYSTEM

Certificate of Facsimile Transmission

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On 10-5-93

Michael D. Stein
Michael D. Stein Reg. No. 34,734

Commissioner of Patents & Trademarks
Washington, DC 20231

Sir:

AMENDMENT TRANSMITTAL LETTER

Transmitted herewith is an amendment in the above-identified application responsive to the Office Action dated September 24, 1993.

- () Small entity status of this application under 37 CFR 1.9 and 1.27 has been established by a verified statement previously submitted.
- () A verified statement claiming small entity status under 37 CFR 1.9 and 1.27 is enclosed.
- () Statement to Support Filing and Submission of DNA/Amino Acid Sequences in Accordance with 37 CFR §§ 1.821 through 1.825.
- (xx) No additional fee is required.

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- 5-93 TUE 12:03 W.W.K.M.N.

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The fee for additional claims presented in this amendment has been calculated as follows:

				SMALL ENTITY			OTHER THAN SMALL ENTITY		
	Claims Remaining After Amendment	Highest Number Previously Paid for	No. Extra	Rate	Fee	OR	Rate	Fee	
Total Claims	45	45 (at least 20)	0	x\$11=	\$	OR	x\$22=	\$	
Indep. Claims	3	3 (at least 3)	0	x\$37=	\$	OR	x\$74=	\$	
First Presentation Multiple Dependent Claims				+	\$115=	\$	OR	\$230=	\$
Total fee for added claims:					\$ 0			\$	

() Please charge my Deposit Account No. 23-3050 in the amount of \$____. This sheet is attached in triplicate.

() A check in the amount of \$____ is attached. Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.

(XX) The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 23-3050. This sheet is attached in triplicate.

(XX) Any additional filing fees required under 37 CFR 1.16 including fees for presentation of extra claims.

(XX) Any additional patent application processing fees under 37 CFR 1.17 and under 37 CFR 1.20(d).

(XX) The Commissioner is hereby authorized to charge payment of the following fees during the pendency of this application or credit any overpayment to Deposit Account No. 23-3050. This sheet is attached in triplicate.

(XX) Any patent application processing fees under 37 CFR 1.17 and under 37 CFR 1.20(d).

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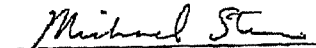
- 2 -

A157

- 5-93 TUE 12:03 P.M. N.Y.N.

- () The issue fee set in 37 CFR 1.18 at or before mailing of the Notice of Allowance, pursuant to 37 CFR 1.311(b).
- (XX) Any filing fees under 37 CFR 1.16 including fees for presentation of extra claims.

Date: October 5, 1993


Signature
Michael D. Stein
Registration No. 34,734

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- 3 -

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*** ACTIVITY REPORT ***

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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EXAMINER

ART UNIT

PAPER NUMBER

DATE MAILED:

EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) M. Stein (Attorney) (3) H. Casing (PTO)
(2) L. Stulp (Applicant) (4) _____

Date of interview 10-4-93Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).Exhibit shown or demonstration conducted: ☐ Yes ☐ No. If yes, brief description: _____Agreement: ☐ was reached with respect to some or all of the claims in question. ☒ Was not reached.Claims discussed: 1Identification of prior art discussed: Sagey and SongDescription of the general nature of what was agreed to if an agreement was reached, or any other comments: Discussed

additional hardware required by special spread spectrum processor
used in Sagey and the different use of the control signal of
Song, forward as opposed to reverse channel control.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

Unless the paragraphs below have been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

☐ Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action.

Gregory L. Casing
Examiner's Signature

PTOL-413 (REV. 1-84)

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CONFIDENTIAL
TruePosition, Inc. v. Andrew Corp.
Civil Action No. 05-00747-SLR

TPI0021653

OCT-13-93 WED 13:55 WWF V 1 LIBERTY PL 46FL FAX NO. 21 8P2439

P.02

DOCKET NO.: 08/059,248

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Stilp et al.

Serial No.: 08/059,248

Group Art Unit: 2202

Filed: May 7, 1993

Examiner: G. Issing

For: CELLULAR TELEPHONE LOCATION SYSTEM

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GROUP 220/290/L&R

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Michael D. Stein
Michael D. Stein Reg. No. 34,734

Honorable Commissioner of
Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

SUPPLEMENTAL RESPONSE

The Examiner is respectfully requested to approve the attached slightly revised Figure 7A. In particular, attached is a copy of a formal drawing for Figure 7A, which is substantially identical to the original drawing, but with the addition of the central site shown in the center of the drawing. Upon approval of the attached drawing, formal drawings will be filed with the

A161

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P.03

DOCKET NO.: 08/059,248

PATENT

Official Draftsman.

Respectfully submitted,



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Date: 10-13-93

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- 2 -

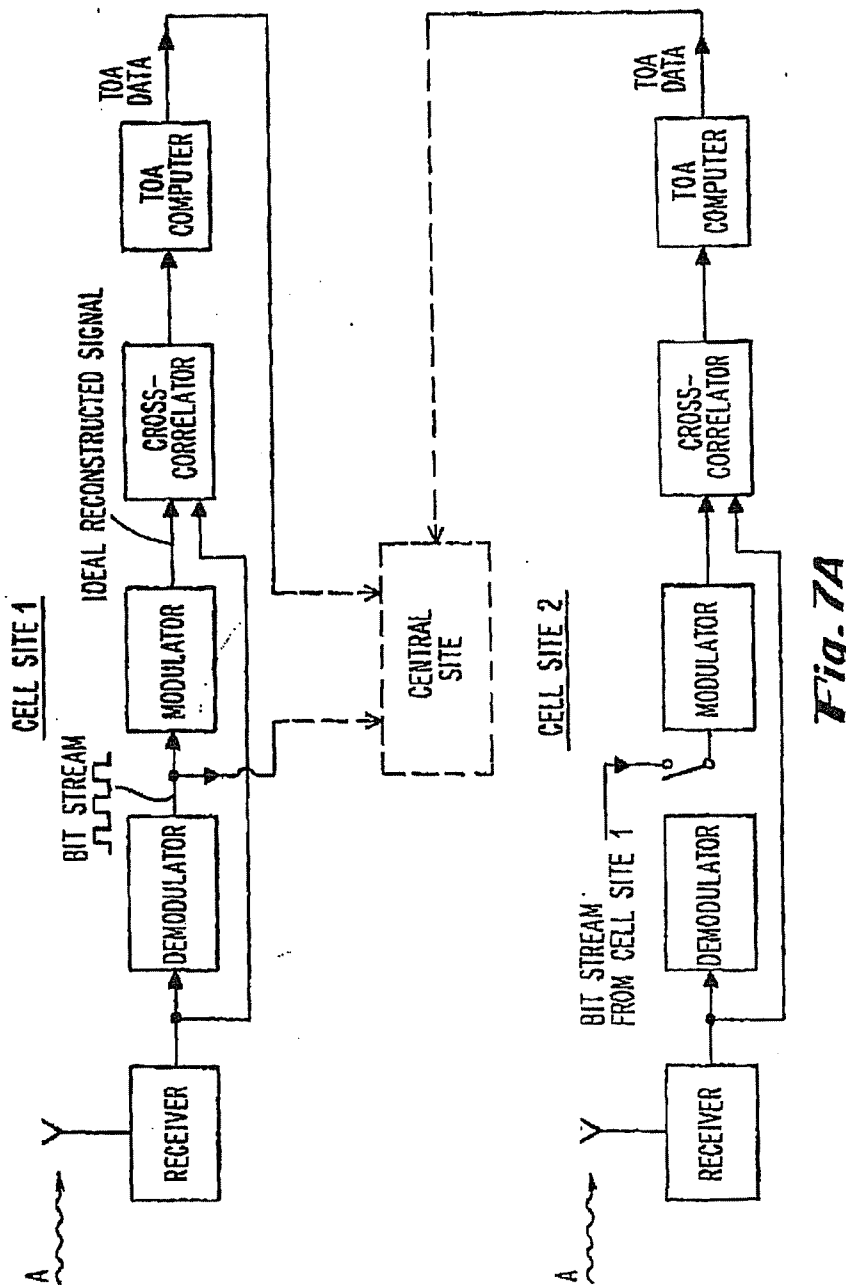
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October 13, 1993

F A C S I M I L E M E S S A G E

ATTORNEY DOCKET NO.: ACOM-0001

SERIAL NO.: 08/059,248
FILED: 5/7/93

TO: Examiner: G. Issing
Group: 2202

TELECOPIER NO.: 1-703-308-3718 or
1-703-308-3721
1-703-305-3603

FROM: Michael D. Stein

PAGES TO FOLLOW: 3

A164

10/13/93 13:54 703 305 3603

GRP 220

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*** ACTIVITY REPORT ***

RECEPTION OK

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PAGES	4
RESULT	OK

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A165



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
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Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAME OF INVENTOR	ATTORNEY
08/059,248	05/07/93	STILP	
		22M2/1029	
ALBERT W. PRESTON, JR. WOODCOCK, WASHBURN, KURTZ, MACKIEWICZ AND NORRIS ONE LIBERTY PLACE, 46TH FLOOR PHILADELPHIA, PA 19103		L ACDM0001 EXAMINER ISSING, G 2202 DATE MAILED: 10/29/93	

NOTICE OF ALLOWABILITY

PART I.

- ☒ This communication is responsive to Amendment filed 10/5/93
- ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
- ☒ The allowed claims are 1-45
- ☐ The drawings filed on _____ are acceptable.
- ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. _____, filed on _____
- ☐ Note the attached Examiner's Amendment.
- ☒ Note the attached Examiner Interview Summary Record, PTOL-413, of 10/4/93
- ☐ Note the attached Examiner's Statement of Reasons for Allowance.
- ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
- ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

- ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
- ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - ☐ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____. CORRECTION IS REQUIRED.
 - ☒ The proposed drawing correction filed on 10/13/93 has been approved by the examiner. CORRECTION IS REQUIRED.
 - ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - ☒ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

Attachments:

- Examiner's Amendment
- Examiner Interview Summary Record, PTOL-413
- Reasons for Allowance
- Notice of References Cited, PTO-892
- Information Disclosure Citation, PTO-1449

- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

GR 3
PR. ER
ART. 1.1.2.2

A166


UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

 Address: Box ISSUE FEE
 COMMISSIONER OF PATENTS AND TRADEMARKS
 Washington, D.C. 20231

22M2/1029

 ALBERT W. PRESTON, JR.
 WOODCOCK, WASHBURN, KURTZ, MACKIEWICZ
 AND NORRIS
 ONE LIBERTY PLACE, 46TH FLOOR
 PHILADELPHIA, PA 19103

**NOTICE OF ALLOWANCE
 AND ISSUE FEE DUE**

Note attached communication from the Examiner

This notice is issued in view of applicant's communication filed

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE
08/059,248	05/07/93	045	ISSING, G	2202 10/29/93

First Named Applicant: STILP, LOUIS A.

TITLE OF INVENTION: CELLULAR TELEPHONE LOCATION SYSTEM

ATTY'S DOCKET NO.	CLASS-SUBCLASS	CAUSE	REASON	DATE
2 ACOM0001	342-387.000	799	UTILITY	YES \$585.00 01/31/94

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
 PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS
 APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

HOW TO RESPOND TO THIS NOTICE:
I. Review the SMALL ENTITY Status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- If the Status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- Pay FEE DUE shown above, or
- File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

- Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by a charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.
- All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees.

PATENT AND TRADEMARK OFFICE COPY

PTOL-65 (REV 12-88) (OMB Clearance is pending)

CONFIDENTIAL
**TruePosition, Inc. v. Andrew Corp.
 Civil Action No. 05-00747-SLR**
A167
TPI0021660



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET
08/059,248	05/07/93	STILP	
		22M2/1202	
ALBERT W. PRESTON, JR. WOODCOCK, WASHBURN, KURTZ, MACKIEWICZ AND NORRIS ONE LIBERTY PLACE, 46TH FLOOR PHILADELPHIA, PA 19103		L ACOM0001 EXAMINER ISSUING ART UNIT PAPER NUMBER 2202 10 DATE MAILED: 12/02/93	

SUPPLEMENTAL
NOTICE OF ALLOWABILITY

PART I.

1. ☒ This communication is responsive to *telephonic communication of 11/24/93*
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are *1-45*
4. ☐ The drawings filed on _____ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [] been received. [] not been received. [] been filed in parent application Serial No. _____, filed on _____
6. ☐ Note the attached Examiner's Amendment.
7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☒ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

PART II.

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - a. ☐ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____. CORRECTION IS REQUIRED.
 - b. ☒ The proposed drawing correction filed on *12/13/93* has been approved by the examiner. CORRECTION IS REQUIRED.
 - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - d. ☒ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

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- Information Disclosure Citation, PTO-1449

- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

Gregory C. Luning
GFL
PFL
ER

A168



DOCKET NO.: 08/059,248

PATENT #11

4/10
B 1
Issue Batch No.: Z99
Date of Notice
of Allowance : 10/29/93
Serial No. : 08/059,248

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Louis A. Stilp

Serial No.: 08/059,248

Group No.: 2202

Filed: May 7, 1993

Examiner: G. Issing

For: CELLULAR TELEPHONE LOCATION SYSTEM

I, Michael D. Stein, Registration No. 34,734 certify that this correspondence is being deposited with the U.S. Postal Service as First Class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

On 11-17-93
Michael D. Stein
Michael D. Stein Reg. No. 34,734

Box Issue Fee
Commissioner of Patents & Trademarks
Washington, DC 20231

ATTN: Official Draftsman

Sir:

TRANSMITTAL LETTER TO OFFICIAL DRAFTSMAN

Please find enclosed fifteen (15) sheet(s) of formal drawings relating to the above-identified patent application.

This Letter, and the enclosed drawings, each bear the Issue Batch No., the

A169

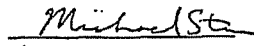
TPI0021662

CONFIDENTIAL
TruePosition, Inc. v. Andrew Corp.
Civil Action No. 05-00747-SLR

date of the Notice of Allowance and Serial No. of the application on the front of the respective document. Please charge any comparison fees to our Deposit Account No. 23-3050.

In view of the above, the present application is believed to be in a condition ready for issuance.

Date: November 17, 1993


Signature
Michael D. Stein
Registration No. 34,734

WOODCOCK WASHBURN KURTZ
MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
Philadelphia, PA 19103
(215) 568-3100

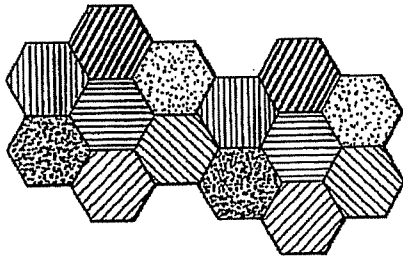
- 2 -

A170

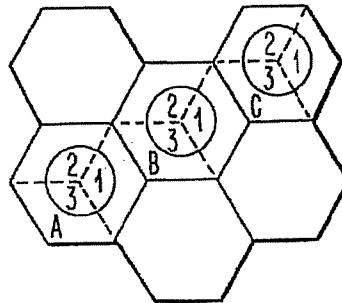
Sheet 1 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

5327144

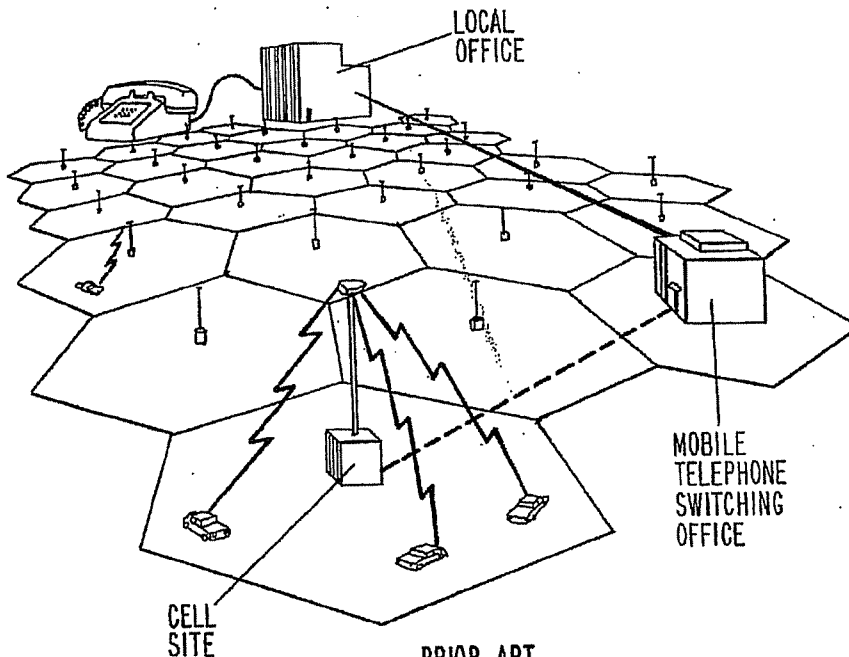
U.S. PAT. & TM. OFF.
 CLASS. & SUBCL. NO.
 382 382



PRIOR ART
Fig. 1A



PRIOR ART
Fig. 1B



PRIOR ART
Fig. 1C

A171

Sheet 2 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

FIG. 2
 CLASSIFIED
 342387

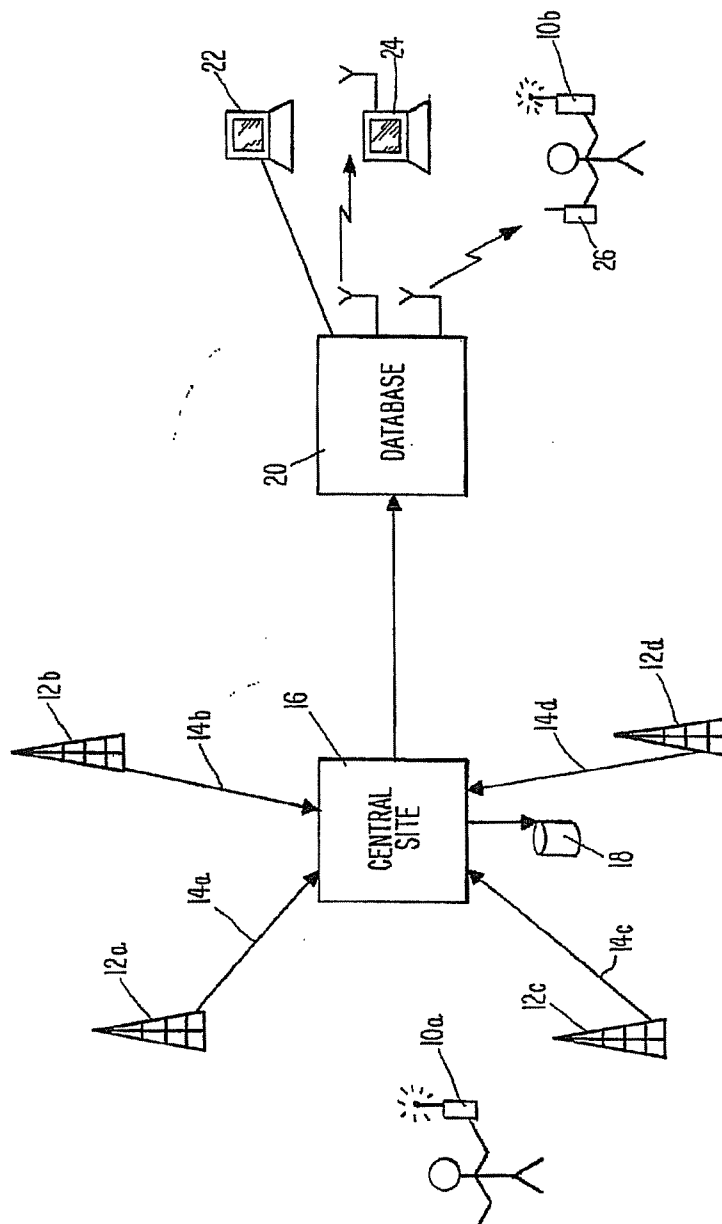


Fig. 2

A172

Sheet 3 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

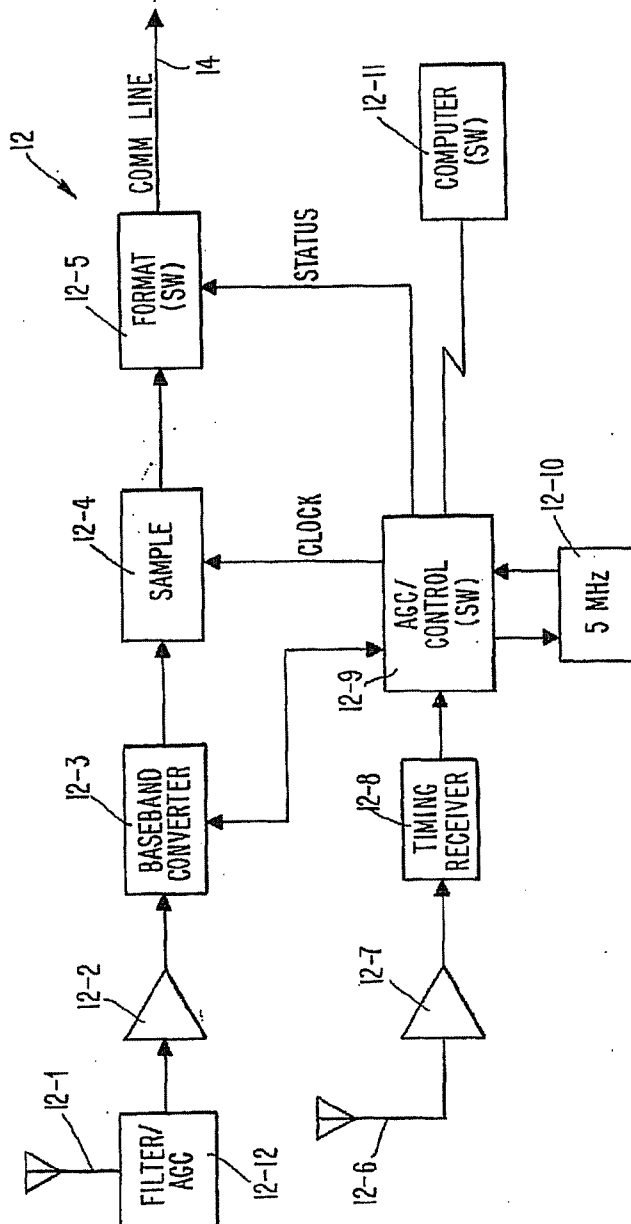
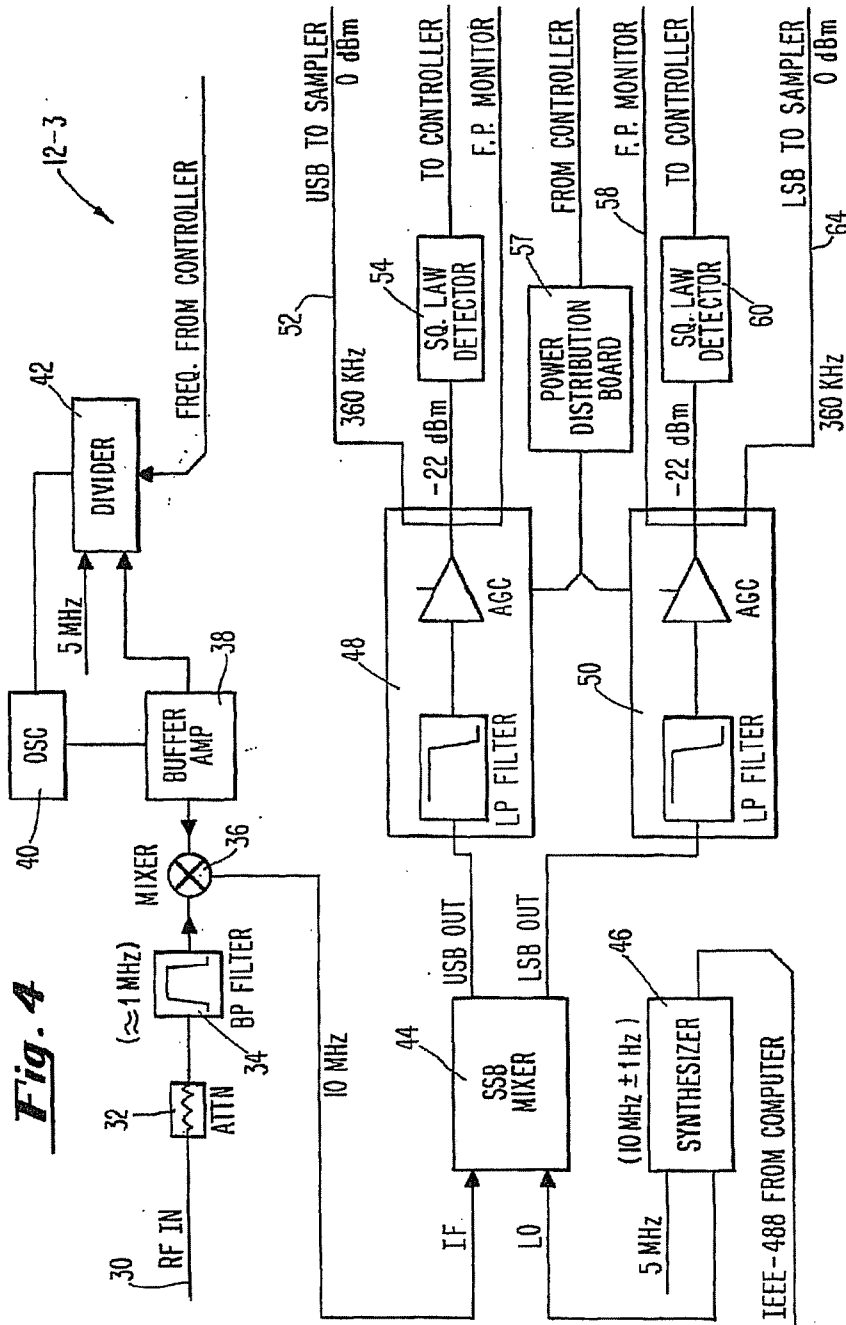


Fig. 3

A173

Sheet 4 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248



A174

Sheet 5 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

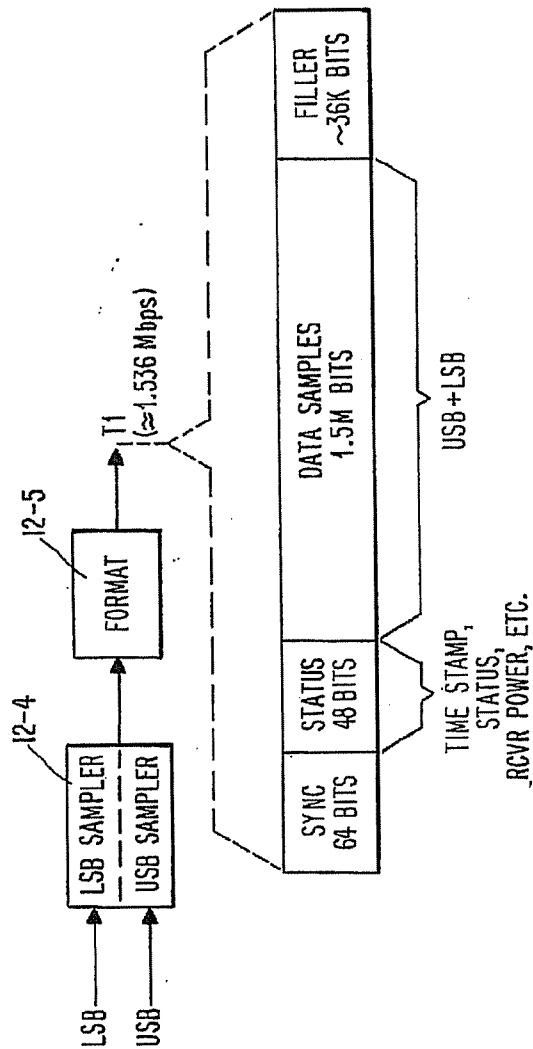


Fig. 5

A175

Sheet 6 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

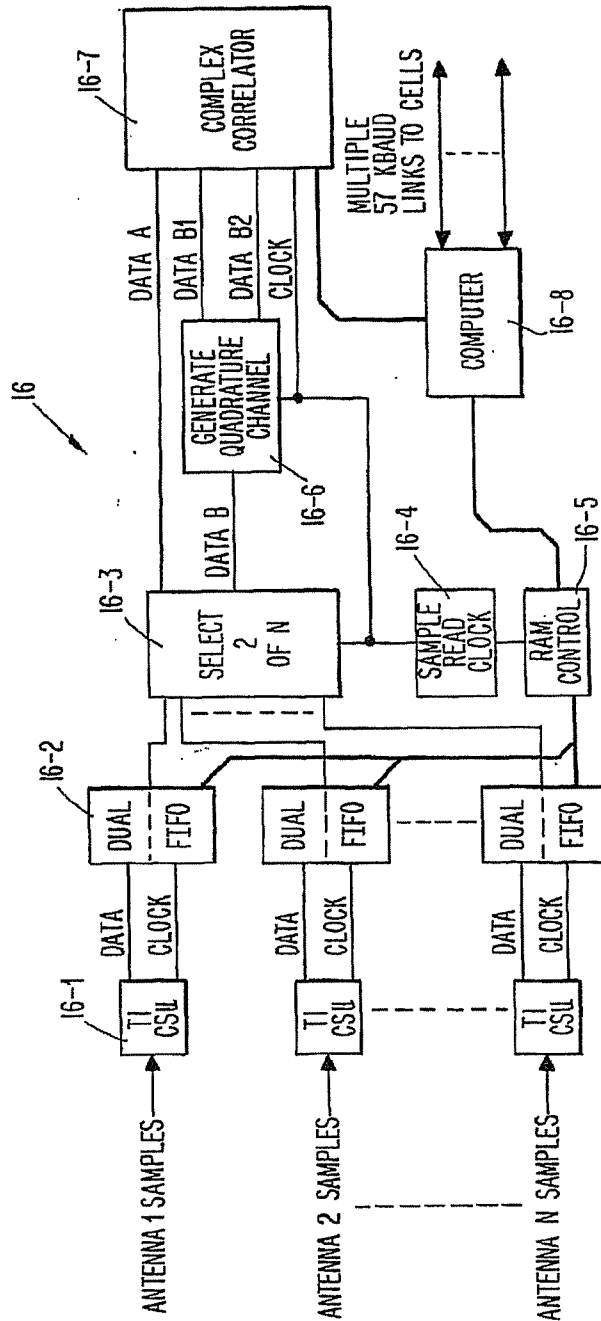


Fig. 6

A176

TPI0021669

Sheet 7 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

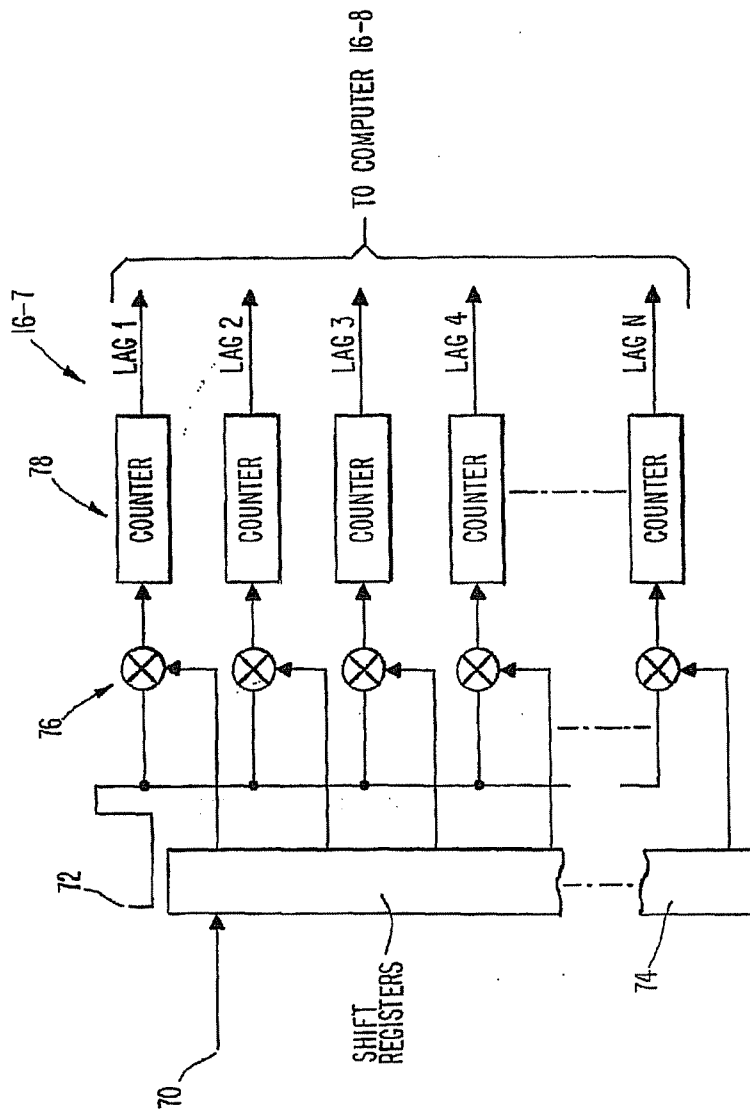


Fig. 6A

A177

Sheet 8 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

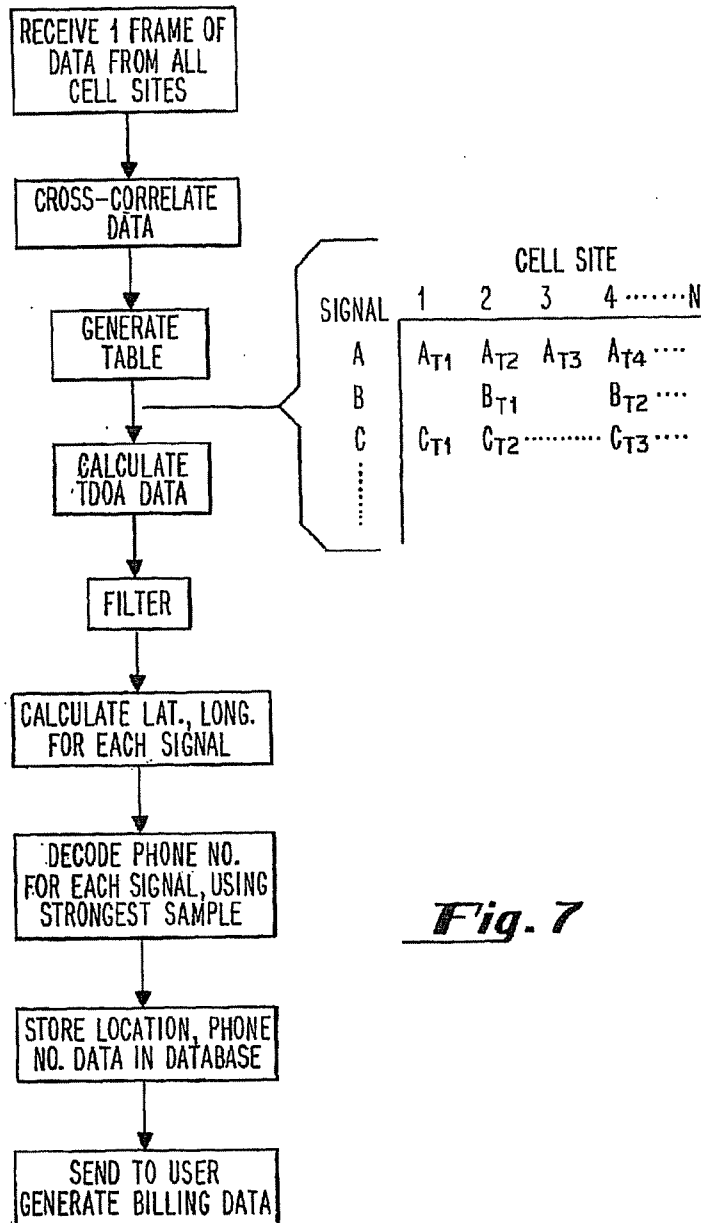


Fig. 7

A178

TPI0021671

Sheet 9 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

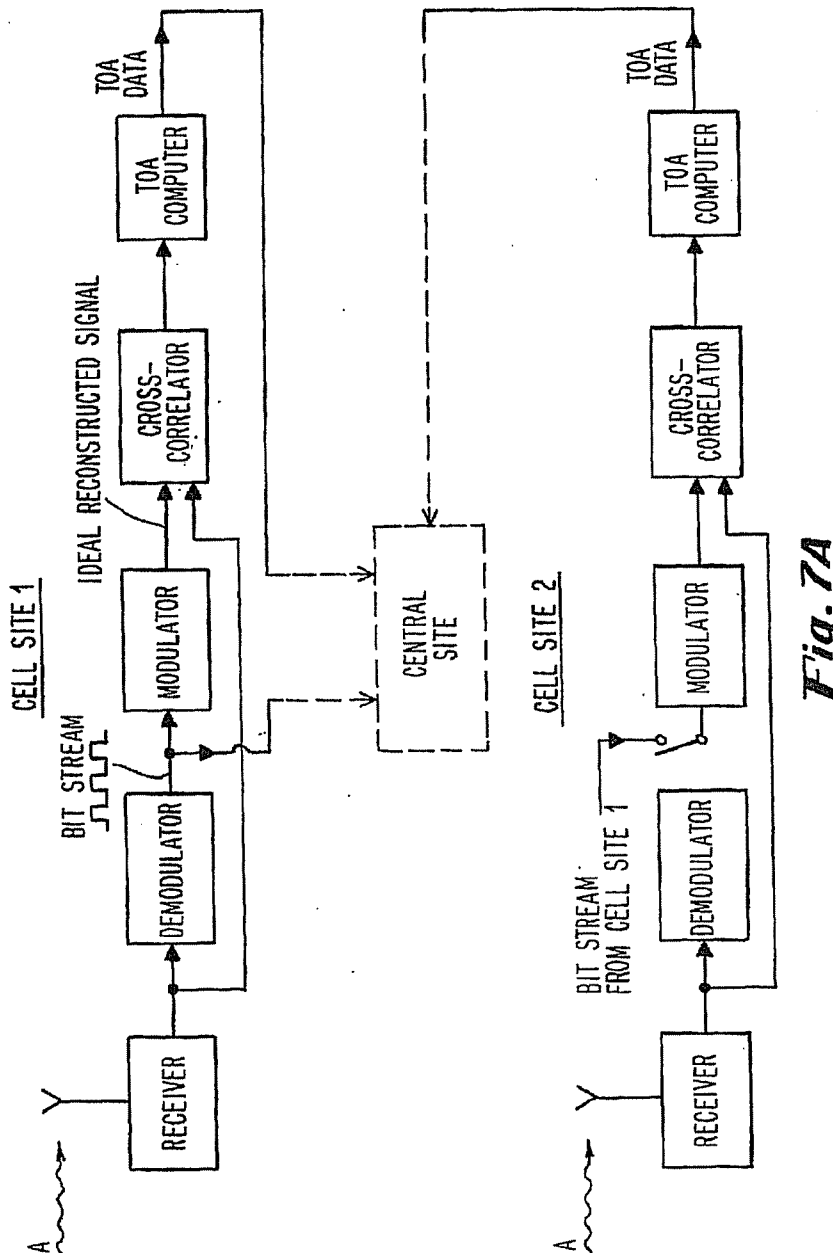


Fig. 7A

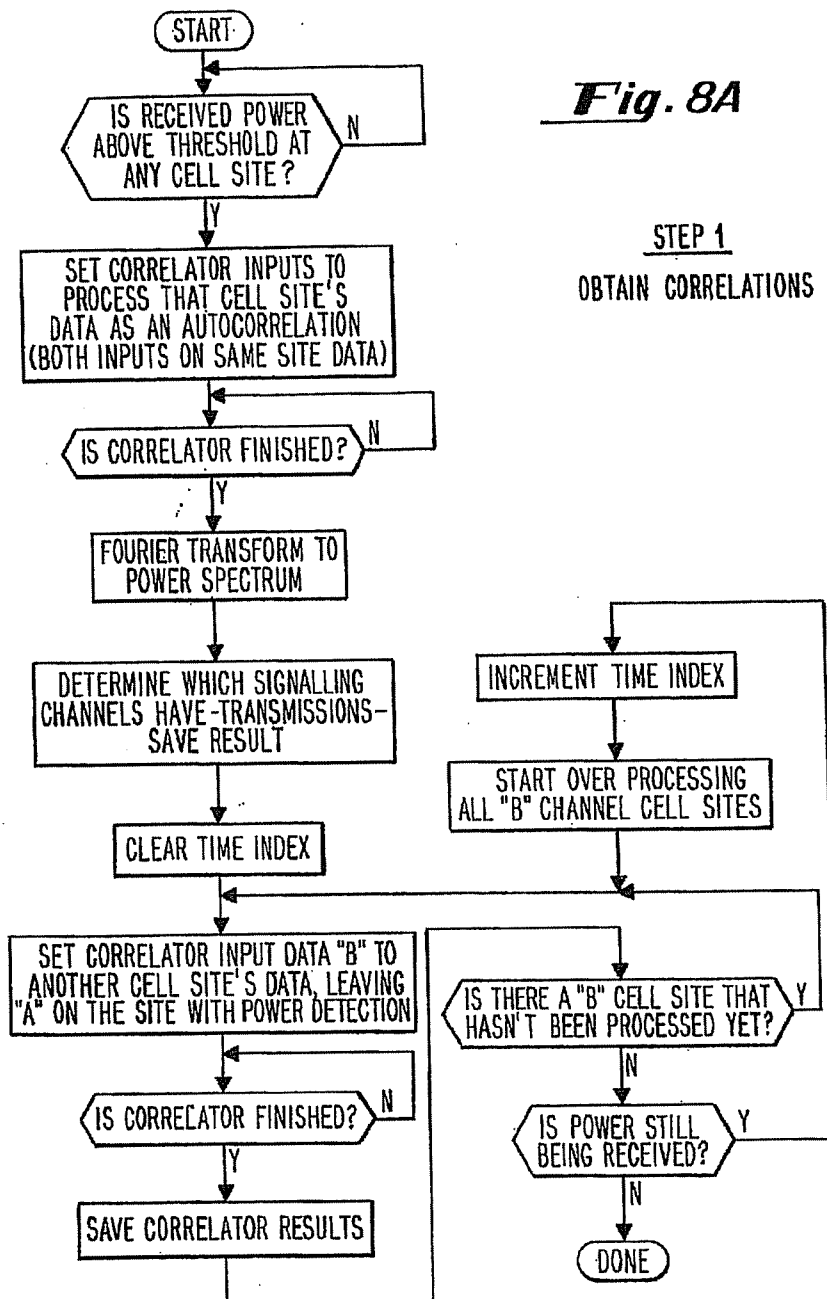
A179

TPI0021672

Sheet 10 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

Fig. 8A

STEP 1
 OBTAIN CORRELATIONS

**A180**

Sheet 11 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

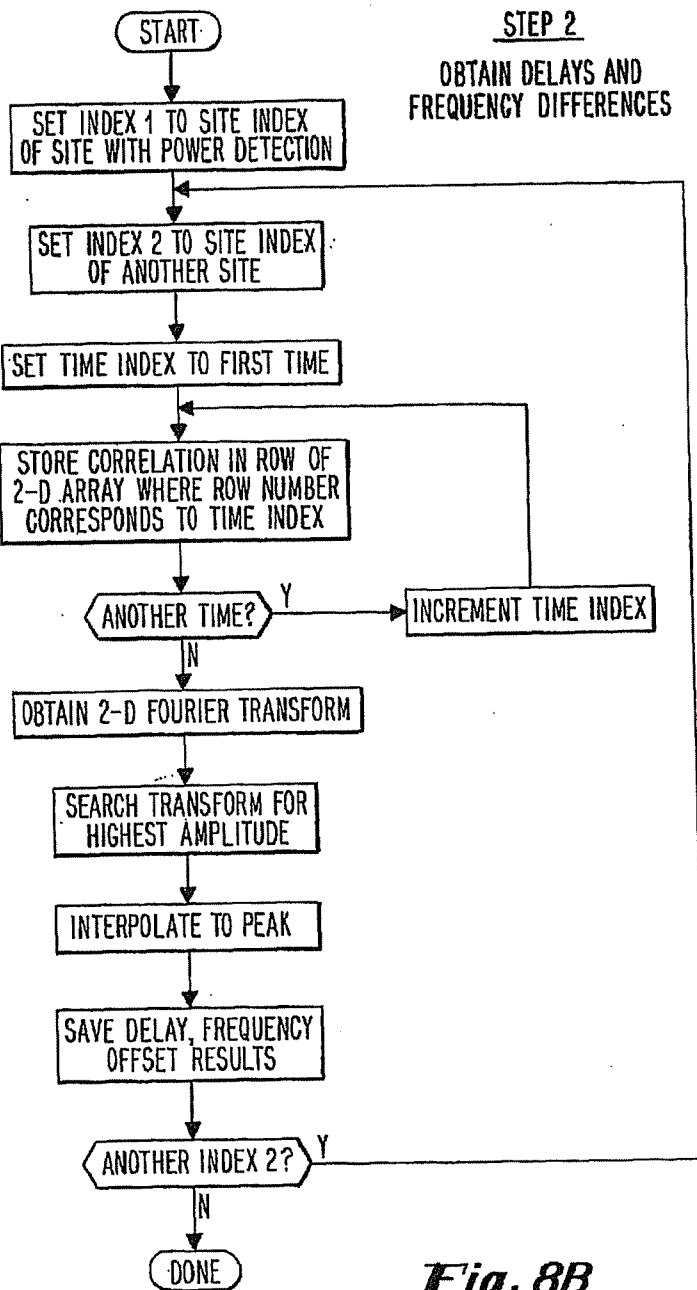


Fig. 8B

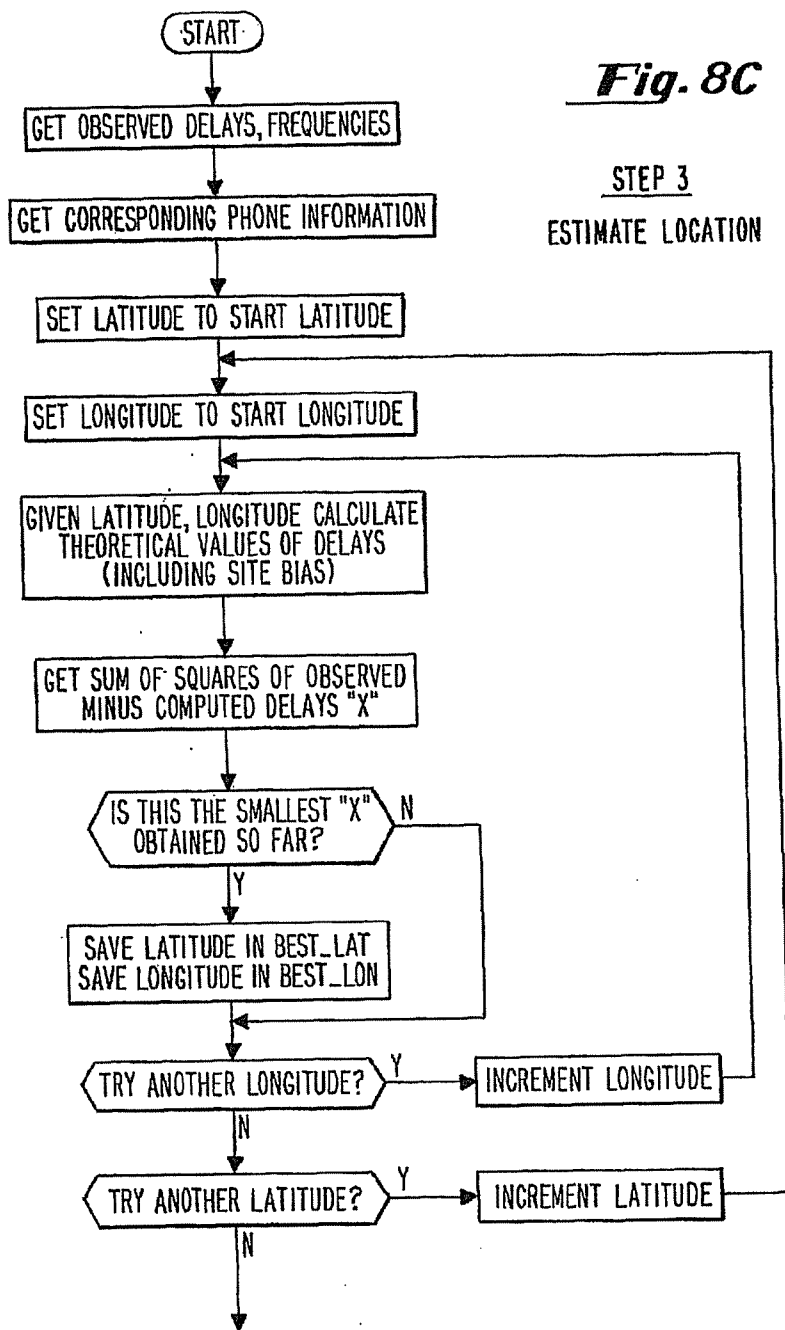
A181

TPI0021674

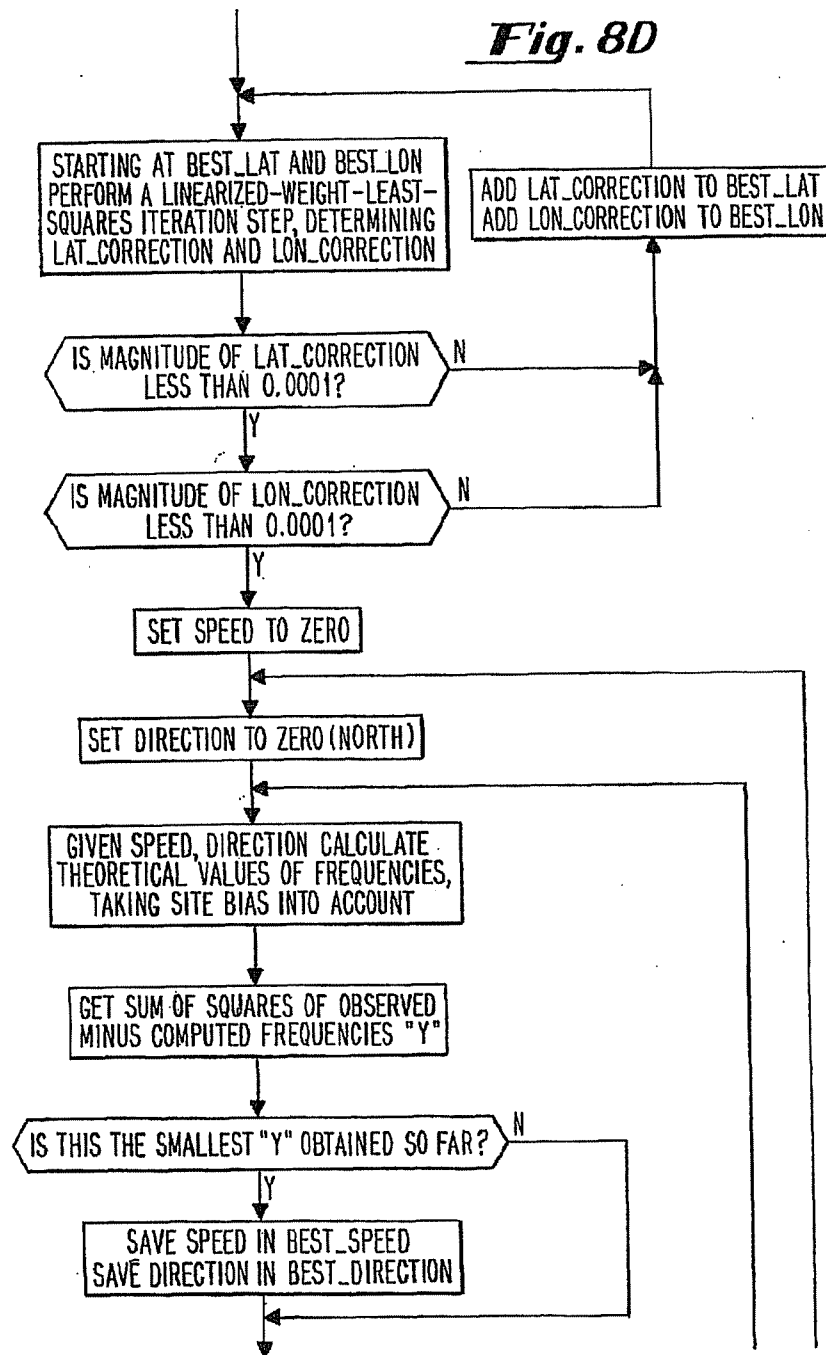
Sheet 12 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

Fig. 8C

STEP 3
 ESTIMATE LOCATION

**A182**

Sheet 13 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

Fig. 8D**A183**

Sheet 14 of 15
 Issue Batch No.: Z99
 Allowance Date: 10/29/93
 Serial No.: 08/059,248

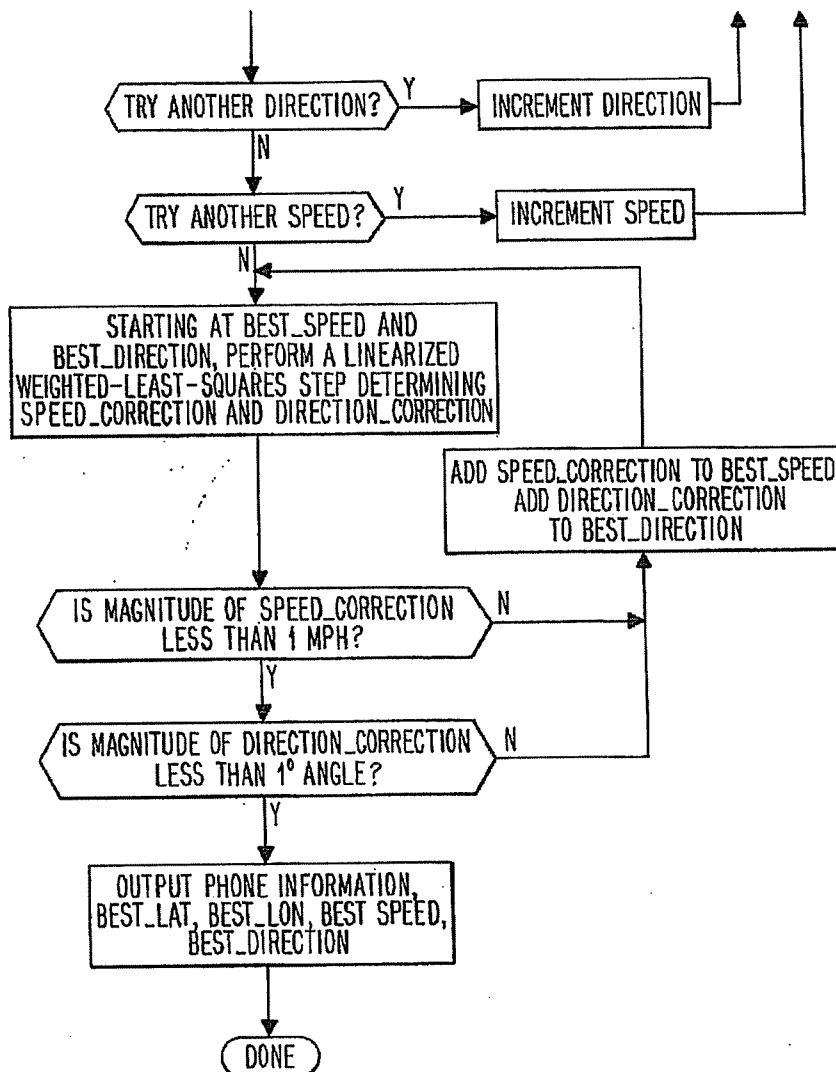


Fig. 8E

A184

Sheet 15 of 15
Issue Batch No.: Z99
Allowance Date: 10/29/93
Serial No.: 08/059,248

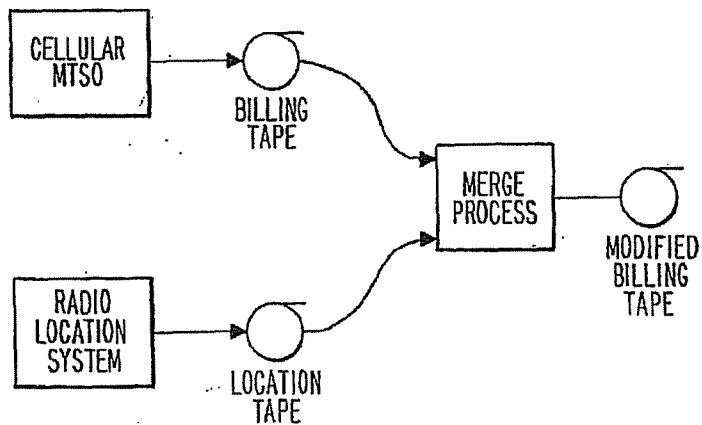


Fig. 9

A185

TPI0021678

DOCKET NO. ACOM-0001

OCT 27 1993
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Louis Stupp

Serial No.: 08/059,248

Group No.: 2202

Filed: May 7, 1993

Examiner: G. Issing

For: CELLULAR TELEPHONE LOCATION SYSTEM

PATENT

RECEIVED

NOV 10 1993

GROUP 220

I, Michael D. Stain, Registration No. 34,734 certify that this correspondence is being deposited with the U.S. Postal Service as First Class mail in an envelope addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

On 10-25-93

Michael Stain
Michael D. Stain Reg. No. 34,734

Commissioner of Patents & Trademarks
Washington, DC 20231

Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

() In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of the above identified application as set forth in §1.491, or before the mailing date of a first Office Action on the merits of the above-identified application, no additional fee is required.

(XX) In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, therefore:

060 AS 11/09/93 08059248

1 126 200.00 Ck

A186**TPI0021679**

CONFIDENTIAL
TruePosition, Inc. v. Andrew Corp.
Civil Action No. 05-00747-SLR

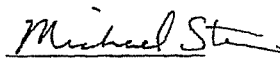
- () Certification in Accordance with §1.97(e) is attached; or
(XX) The fee of \$200.00 as set forth in §1.17(p) is attached.
- () In accordance with §1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before the payment of the Issue Fee, therefore included are: Certification in Accordance with §1.97(e); Petition Requesting Consideration of the Information Disclosure Statement; and the fee of \$130.00 as set forth in §1.17(i)(1).
- () Copies of each of the references listed on the attached Form PTO-1449 are enclosed herewith.
- () In accordance with §1.98(d), copies of some or all of the references listed on the attached Form PTO-1449 are not enclosed herewith because they were previously cited by or submitted to the Patent and Trademark Office in prior application Serial No. for which a claim for priority under 35 U.S.C. §120 has been made in the instant application.

Please charge any deficiency or credit any overpayment to Deposit Account No. 23-3050.
This form is submitted in triplicate.

The relevance of those listed references which are not in the English language is as follows:

Respectfully submitted,

Date: October 25, 1993


Signature
Michael D. Stein
Registration No. 34,734

WOODCOCK WASHBURN KURTZ
MACKIEWICZ & NORRIS
One Liberty Place - 46th Floor
Philadelphia, PA 19103
(215) 568-3100

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- 2 -

A187

TP10021680



#B

Sheet 1 of 1

Form PTO-1449 Modified			Docket No. ACOM-0001		Serial No. 08/059,248	
List of Patents and Publications Cited by Applicant (Use several sheets if necessary)			Applicant Louis A. Stilp et al.			
			Filing Date May 7, 1993		Group 2202	
U.S. Department of Commerce Patent and Trademark Office						
U. S. PATENT DOCUMENTS						
Examiner Initial		Document No.	Date	Name	Class	Subclass
gi	AA	5,101,501	3/31/92	Gilhousen et al.	455	33
gi	AB	5,126,748	6/30/92	Ames et al.	342	353
gi	AC	5,128,623	7/7/92	Gilmore	328	1
	AD					
	AE					
	AF					
	AG					
	AH					
	AI					
	AJ					
FOREIGN PATENT DOCUMENTS						
Examiner Initial		Document No.	Date	Country	Translation YES NO	
gi	AK	WO 93/06685	9/18/92	PCT	yes	
	AL					
	AM					
	AN					
	AQ					
EXAMINER <i>Gregory E. Irving</i>			DATE CONSIDERED <i>1/24/94</i>			

A188

K:\UIFORMS\IDS\1449-PAT.TAB

TPI0021681



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
---------------	-------------	-----------------------	---------------------

08/059,248 05/07/93 STILP

L ACOM0001

EXAMINER

ISSING, G

22M2/0125

ALBERT W. PRESTON, JR.
WOODCOCK, WASHBURN, KURTZ, MACKIEWICZ
AND NORRIS
ONE LIBERTY PLACE, 46TH FLOOR
PHILADELPHIA, PA 19103

ART UNIT

PAPER NUMBER

2202

01/25/94

SUPPLEMENTAL
NOTICE OF ALLOWABILITY

PART I.

1. ☒ This communication is responsive to *Info. Disc. Statement filed 10/27/93*.
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are *1-45*.
4. ☐ The drawings filed on _____ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [...] been received. [...] not been received. [...] been filed in parent application Serial No. _____, filed on _____.
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7. ☐ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☐ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☒ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

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2. ☐ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
 - a. ☐ Drawing Informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. _____ CORRECTION IS REQUIRED.
 - b. ☐ The proposed drawing correction filed on _____ has been approved by the examiner. CORRECTION IS REQUIRED.
 - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
 - d. ☐ Formal drawings are now REQUIRED.

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- Information Disclosure Citation, PTO-1449

- Notice of Informal Application, PTO-152
- Notice re Patent Drawings, PTO-948
- Listing of Bonded Draftsmen
- Other

Gregory C. Issing
GREGORY C. ISSING
PRIMARY EXAMINER
ART UNIT 222

A189

PTOL-37 (REV. 4-89) *

USCOMM-DC 89-3709

CONFIDENTIAL
TruePosition, Inc. v. Andrew Corp.
Civil Action No. 05-00747-SLR

TPI0021682

ACOM-0001

PART B - ISSUE FEE TRANSMITTAL

585-242

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advanced orders and notification of maintenance fees will be mailed to addressee entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below; or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of Issue Fee or thereafter. See reverse for Certificate of Mailing.

1. CORRESPONDENCE ADDRESS	2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)
ALBERT M. PRESTON, JR. WOODCOCK, WASHBURN, KURTZ, MACKIEWICZ AND NORRIS ONE LIBERTY PLACE, 46TH FLOOR PHILADELPHIA, PA 19103	INVENTOR'S NAME
	Street Address
	City, State and ZIP Code
	CO-INVENTOR'S NAME
	Street Address
	City, State and ZIP Code
	<input type="checkbox"/> Check if additional changes are on reverse side

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP/PART UNIT	DATE DUE
08/059,248	05/07/93	945	ISS/ING, H	08/01/94
First Named Applicant				
STILP, LOUIS A.				

TITLE OF INVENTION
CELLULAR TELEPHONE LOCATION SYSTEM

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
ACOM0001	342-387.000	239	UTILITY	YES	\$36.00	01/31/94

30030 01/31/94 08059248 23-3050 030 561 36.00CH

3. Further correspondence to be mailed to the following:	4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.
	Woodcock Washburn Kurtz 1 Mackiewicz & Norris
	2
	3

DO NOT USE THIS SPACE

090 BA 01/31/94 08059248

1 242 SH...

5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)		5a. The following fees are enclosed:	
(1) NAME OF ASSIGNEE: Associated RT, Inc.		<input checked="" type="checkbox"/> Issue Fee <input type="checkbox"/> Advanced Order - # of Copies (Minimum of 10)	
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A. <input type="checkbox"/> This application is NOT assigned. <input checked="" type="checkbox"/> Assignment previously submitted to the Patent and Trademark Office. <input type="checkbox"/> Assignment is being submitted under separate cover. Assignments should be directed to Box ASSIGNMENTS.		The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.	
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DOCKET NO.: ACOM-0001

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

Louis A. Stilp et al.

Serial No.: 08/059,248

Group No.: 2202

Filed: May 7, 1993

Examiner: G. Issing

For: CELLULAR TELEPHONE LOCATION SYSTEM

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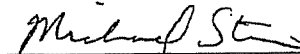
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